

ADDITIONAL NOTES ON THE GENUS CITHAREXYLUM. III

Harold N. Moldenke

CITHAREXYLUM B. Juss.

Additional bibliography: Moldenke, Phytologia 13: 242 & 277—304. 1966; G. Taylor, Ind. Kew. Suppl. 13: 31. 1966.

CITHAREXYLUM BRACHYANTHUM (A. Gray) A. Gray

Additional synonymy: Citharexylum brachyanthum (A. Gray ex Hemsl.) A. Gray apud G. Taylor, Ind. Kew. Suppl. 13: 31. 1966.

Additional bibliography: Moldenke, Phytologia 13: 281—282. 1966; G. Taylor, Ind. Kew. Suppl. 13: 31. 1966.

CITHAREXYLUM FLABELLIFOLIUM S. Wats.

Additional bibliography: Moldenke, Phytologia 13: 286. 1966; G. Taylor, Ind. Kew. Suppl. 13: 31. 1966.

CITHAREXYLUM HIRTELLUM Standl.

Additional bibliography: Moldenke, Phytologia 6: 409—411. 1958.

Breedlove & Raven refer to the fruit of this plant as "berries", but they are actually drupes. These collectors found the plant growing on steep heavily wooded slopes, fruiting in October.

Additional citations: MEXICO: Chiapas: Breedlove & Raven 13625 (Z).

xCITHAREXYLUM JAMAICENSE Moldenke

Additional bibliography: G. Taylor, Ind. Kew. Suppl. 13: 31. 1966; Moldenke, Phytologia 13: 293. 1966.

CITHAREXYLUM MONTANUM Moldenke

Additional bibliography: Moldenke, Phytologia 6: 472—474 (1959) and 13: 298. 1966.

xCITHAREXYLUM PERKINSI Moldenke

Emended synonymy: Citharexylum perkinsii Moldenke, Résumé Suppl. 10: 5, in syn. 1964; G. Taylor, Ind. Kew. Suppl. 13: 31. 1966.

Additional bibliography: Moldenke, Phytologia 13: 301. 1966; G. Taylor, Ind. Kew. Suppl. 13: 31. 1966.

CITHAREXYLUM RIGIDUM (Briq.) Moldenke

Additional bibliography: Moldenke, Phytologia 7: 15—17 (1959) and 13: 300. 1966.

CITHAREXYLUM ROSEI Greene.

Additional bibliography: P. C. Standl., Contrib. U. S. Nat.

Herb. 23: 1237 & 1239. 1924; Moldenke, Phytologia 7: 18—20. 1959; Moldenke, Biol. Abstr. 37: 1062. 1962; Hocking, Excerpt. Bot. A.5: 45. 1962; Moldenke, Phytologia 13: 296. 1966.

Recent collectors describe this plant as an "abundant treelike shrub, to 5 m. tall, trunk 10 cm. in diameter, flowers apparently purplish", growing in a stream valley and on bearby rocky oak-covered mountainside, or with Myrtillocactus and Opuntia in matorral, at 2000—2100 meters altitude, flowering in September, and fruiting in November. H. S. Gentry 8564 was collected in the "pass through Sierra Papantón near highway on Durango-Zacatecas border" and may, therefore, have actually come from either of these states.

Additional citations: MEXICO: Durango: H. S. Gentry 8564 (Ca—805272, Mi). San Luis Potosí: J. Rzedowski 8454 (Ip). Zacatecas: R. McVaugh 17670 (Mi, Mi, Z).

CITHAREXYLUM ROSEI var. DURANGENSE Moldenke

Additional & emended synonymy: Rauwolfia lycioides Lag. & Rodr., Anal. Cienc. Nat. 5: 69—70. 1802. Rauwolfia lycioides Cav. apud Jacks. in Hook. f. & Jacks., Ind. Kew. 2: 693. 1895.

In a series of very interesting communications from Dr. Rogers McVaugh, dated October 11, November 5, and December 2, 1963, I learn that the University of Michigan negative 1700 depicts the original type specimen of Rauwolfia lycioides Lag. & Rodr. in the Madrid herbarium. "The same specimen was photographed by Macbride and you can see his number [29221] on the specimen." He continues "It seems probable that Citharexylum lycioides D. Don and Rauwolfia lycioides were based on different specimens from the same source.....Don's specimen came from Pavón, and according to Don it was thought by Pavón to be a new species of Rauwolfia.....Rauwolfia lycioides 'Cav.' was actually published by Lag. & Rodr. in a signed article; probably Cav. gets the credit, as in Index Kew., because he was the professor."

Recent collectors describe this plant as a small, spreading shrub, about 6 feet tall, with the fruit red when ripe, growing on low limestone hills, in rocky soil, or in Acacia constricta—nopal desert scrub on 20 degrees slope of calcareous gravel-and-boulder conglomerate, at altitudes of 1700—1900 meters, fruiting in July, September, and October. Johnston -- who refers to the fruits as "berries" [they are actually drupes] — calls the plant "scarce", while Gentry describes it as "common in chaparral".

Additional citations: MEXICO: Durango: Correll & Johnston 20211 (Rf); H. S. Gentry 8286 (Mi); M. C. Johnston 2824 (Au—123204). CULTIVATED: Spain: Herb. Hort. Bot. Matrit. s.n. [Herb. Univ. Mich. neg. 1700] (Z—photo).

CITHAREXYLUM ROSEI var. PILOSUM Moldenke

Bibliography: Moldenke, Phytologia 8: 14. 1961; Moldenke, Biol. Abstr. 37: 1062. 1962; Hocking, Excerpt. Bot. A.5: 45. 1962.

Citations: MEXICO: Jalisco: R. McVaugh 17152 (Mi-type, Z-isotype).

CITHAREXYLUM ROXANAE Moldenke

Bibliography: Moldenke, Phytologia 7: 429-430. 1961; Moldenke, Biol. Abstr. 36: 4036. 1961; Hocking, Excerpt. Bot. A.5: 44. 1962.

Carter describes this plant as having virgately branched striate stems to 2 m. long, the flowers "dried up, apparently did not set fruit", growing on a north-facing canyon and ridge, at an altitude of 700-900 m., in association with scattered Ficus palmeri, Celtis reticulata, Quercus tuberculata, Erythrina flabelliformis, Mimosa purpurascens, Bursera microphylla, Lophocereus schottii, Lemaireocereus thurberi, Hyptis emoryi, and Aloysia barbata.

Citations: MEXICO: Baja California: A. Carter 4123 (Ca-199595, Gg); Carter & Ferris 4000 (Ca-199586--type, Z-isotype).

CITHAREXYLUM SCABRUM Sessé & Moc.

Additional bibliography: P. C. Standl., Contrib. U. S. Nat. Herb. 23: 1238 & 1239. 1924; Moldenke, Phytologia 7: 21-23. 1959; Langman, Select. Guide Lit. Flow. Pl. Mex. 633 & 1010. 1964.

Waterfall found this plant growing on grassy limestone hill-sides in Sinaloa.

Additional citations: MEXICO: Sinaloa: Edw. Palmer 1523 (Ca-770322); Waterfall 16266 (Z).

CITHAREXYLUM SCHOTTII Greene.

Additional bibliography: P. C. Standl., Contrib. U. S. Nat. Herb. 23: 1238 & 1241. 1924; Moldenke, Phytologia 7: 23-26 (1959) and 13: 283. 1966.

The Gentle 4793, distributed as C. schottii, is actually C. caudatum L.

Additional citations: MEXICO: Quintana Roo: Lundell & Lundell 7781 (Du-361946, Rf). Yucatán: Lundell & Lundell 7878 (Du-363054, Rf), 8132 (Du-360781, Rf, Rf).

CITHAREXYLUM SCHULZII Urb. & Ekm.

Additional bibliography: Moldenke, Phytologia 7: 26-27. 1959.

Holdridge describes this plant as a shrub, 1 m. tall, the leaves rigid, the fruit red, globose, growing at 1750 meters altitude, fruiting in October.

Additional citations: HISPANIOLA: Haïti: Holdridge 1775 (Mi).

CITHAREXYLUM SESSAEI D. Don

Additional bibliography: M. Kunz, Anatom. Untersuch. Verb. 72-73. 1911; H. B. Davis, Life & Works Pringle 214. 1936; Moldenke, Phytologia 7: 27-28. 1959; Moldenke, Résumé Suppl. 13: 6. 1966; Moldenke, Phytologia 13: 279. 1966.

Hinton describes this plant as 3 m. tall, with white flowers, growing in a barranca at 2200 meters altitude, flowering in November; he notes that he found only "a few plants".

Additional citations: MEXICO: Michoacán: Hinton 15678 (N, N, Rf).

CITHAREXYLUM SHREVEI Moldenke

Additional bibliography: Moldenke, Phytologia 7: 28—29. 1959; Moldenke in Shreve & Wiggins, Fl. Son. Des. 2: 1259. 1964.

CITHAREXYLUM SOLANACEUM Cham.

Additional & emended bibliography: Rambo, Sellowia 7: 260 & 288. 1956; Angely, Fl. Paran. 7: 11. 1957; Moldenke, Phytologia 7: 29—30. 1959; Angely, Fl. Paran. 16: 45 (1960) and 17: 46. 1961; Rambo, Pesquis. Bot. 21: 15—16 & [59]. 1965; Moldenke, Phytologia 13: 299. 1966.

Smith & Klein found this species growing in forests and at forest margins. Rambo (1965) cites Herb. Anchieta 4812, 6559, 36422, 51106 [Sehnem 5071], 54255 [Emrich s.n.], & 54617 from Rio Grande do Sul, and 50922 [Hatschbach 1591] from Paraná, Brazil, all collected by himself except where otherwise stated. He calls it a "Small to medium tree, up to 10 m. high", growing in "Araucaria forests, secondary growth....All collections from the northeastern quadrant, especially the Highlands; only 6559 from the central slopes of the Highlands", with a general distribution "From Rio de Janeiro to RGS [Rio Grande do Sul]."

Additional citations: BRAZIL: Paraná: Reitz & Klein 17750 (Ac). Rio Grande do Sul: Sehnem 5071 (B, B). Santa Catarina: Smith & Klein 13219 (Ac). São Paulo: Puiggari 3330 (P).

CITHAREXYLUM SOLANACEUM var. **MACROCALYX** Moldenke

Additional bibliography: Moldenke, Phytologia 7: 31—32. 1959.

The type specimen, Sellow s.n., deposited in the herbarium of the Botanisches Museum at Berlin, was photographed there by Macbride as his type photograph number 17600, but is now destroyed. The Brescia & Borsani 3361, cited below, bears a notation "Corresponde a muestra No. 4225", but I have not as yet seen this latter collection.

Additional citations: BRAZIL: Rio Grande do Sul: Brescia & Borsani 3361 (Z). State undetermined: Sellow s.n. ["varietas"; Macbride photos 17600; Herb. U. S. Nat. Arb. 197511] (W—photo of type).

CITHAREXYLUM SPATHULATUM Moldenke & Lundell

Additional bibliography: Moldenke, Phytologia 7: 32—33. 1959.

Correll & Johnston describe this as a shrub, to 8 feet tall, growing on chalk cliffs, and fruiting in July. The Lundells describe it as "openly branched".

Additional citations: TEXAS: Hidalgo Co.: Lundell & Lundell 9953 (Mi—type), 12689 (Rf), 12774 (Rf). Starr Co.: Correll & Johnston 18059 (Rf); Lundell & Lundell 12676 (Rf).

CITHAREXYLUM SPINOSUM L.

Additional synonymy: *Hadongia eberhardtii* Gagnep. in Humbert, Not. Syst. 14: 30. 1950. *Cytharexylon spinosum* L. ex Moldenke, Résumé Suppl. 13: 6, in syn. 1966.

Additional & emended bibliography: Griseb., Cat. Pl. Cub. 216. 1866; Hayek in Engl., Bot. Jahrb. 42: 169. 1908; Britton & P. Wils., Scient. Surv. Porto Rico 6: 145 & 146. 1925; Robledo, Lecc. Bot. 2: 498. 1940; Neal, In Gard. Hawaii, ed. 1, 639. 1948; Gagnep. in Humbert, Not. Syst. 14: 30. 1950; E. J. Salisb., Ind. Kew. Suppl. 11: 106. 1953; Moldenke, Verb. 22-23. 1955; Moldenke, Phytologia 7: 77. 1959; Nair & Rehman, Bull. Nat. Bot. Gard. Lucknow 76: 10 & 23, pl. 1, fig. 6, text-fig. 16. 1962; Little & Wadsworth, U.S. Dept. Agr. Forest Serv. Agric. Handb. 249: 480. 1964; Moldenke, Résumé Suppl. 11: 5 (1964) and 12: 9. 1965; Gooding, Loveless, & Proctor, Fl. Barbados 356, 468, & 469. 1965; Neal, In Gard. Hawaii, new rev. ed., 725 & 726. 1965; Moldenke, Résumé Suppl. 13: 2 & 6. 1966; Moldenke, Phytologia 13: 283, 286, 287, 290, & 297. 1966; Anon., Short Guide Bermudas 7 & 16-17. n.d.

Additional illustrations: Nair & Rehman, Bull. Nat. Bot. Gard. Lucknow 76: pl. 1, fig. 6, text-fig. 16. 1962; Anon., Short Guide Bermudas 16 [in color]. n.d.

The type of *Hadongia eberhardtii* was collected by Philippe Albert Eberhardt (no. 3417), probably from cultivated material, at Hadong, Tonkin, Indochina, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris. It was originally proposed in the Bignoniaceae, as the type species of a monotypic genus.

Wilder describes *C. spinosum* as a large spreading tree. Box affirms that on Antigua it is "occasional to frequent locally in woodlands, chiefly on xerophytic hillsides near the sea". W. R. Taylor 49-1155 represents a vigorous shoot and its leaves are deeply toothed. The flowers are described as "white" on G. L. Webster 1582, "cream" on Clemens & Clemens 3755, and "cream-colored" on O. E. White 18. White comments that girls in Burma wear its flowers in their hair.

The Mell & Mell 247, cited below, was erroneously cited by me as *C. macrophyllum* Poir. in Phytologia 6: 463 (1959). The A. R. Cooke s.n. [Manoa trail, 9/26/54] and Degener & Murashige 20075, distributed as *C. spinosum*, are actually *C. caudatum* L., while R. A. Howard 10733 and Purseglove P.6363 are *C. fruticosum* L., and Cowan & Forster 1278 [at least insofar as the Britton Herbarium specimen is concerned] is *C. fruticosum* var. *brittonii* Moldenke.

Nair & Rehman (1962) describe the pollen-grains of *C. spinosum* as follows: 3-zonocolporate, spheroidal (diameter 36 μ ; range 32-39 μ); ectocolpium faint, ends pointed, crassimarginate; endocolpium longate (3.5 x 10.5 μ), the lateral ends slightly rounded; exine 2 μ thick; ectine slightly thicker than the endine, psilate (faint LO), based on Herb. Nat. Bot. Gard. Lucknow 16722, slide 2621, not seen as yet by me.

Little & Wadsworth (1964) say "A related species of péndula (Citharexylum spinosum L.), also known as susana, is wild and planted in St. Croix and St. Thomas and ranges southward to northern South America. It has elliptic leaves 3—8 inches long, thin, hairless, and with prominent network of small veins when dry, and oblong shiny black fruits 3/8 inch long."

Additional citations: BERMUDA ISLANDS: Hamilton: W. R. Taylor 49-1155 (Mi). Main: Bailey, Bailey, Whetzel, Degener, & McCallan s.n. [Experiment Station, Sept. 10, 1921] (Bi). Saint Georges: W. R. Taylor 49-1114 (Mi). LEEWARD ISLANDS: Antigua: Box 1176 (Mi). Guadeloupe: Questel 4627 (W-2453704), 4663 (W-2453681), 4949 (W-2453677), 5066 (W-2453703). WINDWARD ISLANDS: Martinique: Sieber Fl. Mart. 156 (P); Stehlé & Stehlé 5045 (W-2453707), 6819 (W-2453705). TOBAGO: W. E. Broadway 3821 (P). BRITISH GUIANA: Irwin 510 (W-2212846); Mell & Mell 247 (N). FRENCH GUIANA: Martin s.n. [Cainne] (P). INDIA: Mysore: Ramaswany 642 (Lw). INDOCHINA: Tonkin: Eberhardt 3417 (P). POLYNESIA: HAWAIIAN ISLANDS: Oahu: G. L. Webster 1582 (Mi, W-2132472). CULTIVATED: Burma: O. E. White 18 (W-2073086). Curaçao: Arnoldo 2089 (W-2110507). Fiji Islands: G. P. Wilder 1234 (Bi, Ca-948871). Hawaiian Islands: C. M. Cooke s.n. [May 10, 1941] (Bi); A. F. Judd s.n. [Hakipuu, July 3, 1939] (Bi, Bi); H. N. Moldenke 21854 (Mi); Teixiera s.n. [May 27, 1937] (Bi). Indochina: Clemens & Clemens 3755 (W-1428066). Java: Herb. Hort. Bogor. XI.G.17a (N). Senegal: Adam 16948 (Mm), 16949 (Mm).

CITHAREXYLUM STANDLEYI var. MEXICANUM Moldenke

Additional bibliography: Moldenke, Phytologia 7: 47. 1959.

McVaugh describes this plant as tree-like, 4 m. tall, with greenish-white flowers, blooming in July, and found it on a grassy slope of mountain summit in deciduous woodland dominated by various legumes, Bursera, and Cnidoscolus, at 500 meters altitude.

Additional citations: MEXICO: Colima: R. McVaugh 15551 (Mi).

CITHAREXYLUM STEYERMARKII Moldenke

Additional bibliography: Moldenke, Phytologia 7: 48—49. 1959; Moldenke, Biol. Abstr. 34: 481 (1959) and 35: 1465. 1960; Hocking, Excerpt. Bot. A.5: 43. 1962.

CITHAREXYLUM SUBEROSUM Loes.

Additional bibliography: Moldenke, Phytologia 7: 49—50. 1959; Soukup, Biota 3: 30. 1960; G. Taylor, Ind. Kew. Suppl. 13: 31. 1966.

CITHAREXYLUM SUBFLAVESCENS Blake

Additional synonymy: Citarexylum subflavescens Blake ex Moldenke, Résumé Suppl. 6: 9, in syn. 1963.

Additional bibliography: Moldenke, Phytologia 7: 50—53. 1959; Moldenke, Résumé Suppl. 6: 9. 1963.

Bernardi says of this plant "madera resistente a la intemperie — bayas rojas — especie aparentemente restringida a la zone 'selva nublada'" and records the common name "salvio". Hueck found it at 3000 meters altitude. Steyermark describes it as a tree, 8—10 m. tall, the calyx olive-green, corolla white, rachis green-buff, leaves dark-green above, olive-green beneath, and petioles olive-green, growing in cloud forest at 2200 meters altitude, blooming in July.

Additional citations: VENEZUELA: Aragua: H. Pittier 9333 (Mv); J. A. Steyermark 94298 (Z). Mérida: Bernardi 2069 (Ve—47658). Táchira: Hueck s.n. [Paramo la Negra, 10.4.1958] (Ve—42762), s.n. [Paramo la Negra, 27.5.58] (Ve—42762, Ve).

CITHAREXYLUM SUBTHYRSOIDÉUM Pittier

Additional bibliography: Moldenke, Phytologia 7: 53—55 (1959) and 13: 284. 1966.

Steyermark describes this plant as a vining shrub, the leaves firmly membranous, dull-green on both surfaces, and the flowers greenish-yellow, inhabiting dry reforested slopes, flowering in June. Material has been misidentified and distributed in herbaria as C. dawei Moldenke.

Additional citations: VENEZUELA: Federal District: Aristeguieta 793 (Ve—32606); Lasser 742 (W—1879594); J. A. Steyermark 86308 (W—2430158). Lará: Tamayo 3757 (Ve—30045).

CITHAREXYLUM SULCATUM Moldenke

Additional bibliography: Moldenke, Phytologia 7: 56—58. 1959.

Recent collectors describe this plant as a small tree, 6 m. tall, trunk 7 cm. in diameter at breast height, bark gray, slightly fissured, leaves coriaceous, deep-green, calyx green, and fruits shiny-green, becoming violaceous, inhabiting canyon slopes, at 2600—3100 meters altitude, flowering in June, and fruiting in September.

A specimen of Triana 2072, deposited in the Delessert Herbarium at the Conservatoire et Jardin Botaniques at Geneva, was photographed there by Macbride as his type photograph number 28398, but is not a type.

Additional citations: COLOMBIA: Cundinamarca: Cuatrecasas, Jaramillo, & Huertas 25833 (Z); Kóie 5067 (W—2253541); Little & Little 9201 (N); Triana 2072 [Macbride photos 28398] (W—photo).

CITHAREXYLUM TETRAMERUM T. S. Brandeg.

Additional bibliography: P. C. Standl., Contrib. U. S. Nat. Herb. 23: 1237 & 1238. 1924; Moldenke, Phytologia 7: 61—63 (1959) and 13: 296. 1966.

The Lundell & Lundell 12332, distributed as C. tetramerum, is actually C. lycioides D. Don.

CITHAREXYLUM TRISTACHYUM Turcz.

Additional synonymy: Citharexylum tristachyum Turcz., in herb.

Additional bibliography: M. Kunz, Anatom. Untersuch. Verb. 73. 1911; Moldenke, Phytologia 7: 63—66. 1959.

Recent collectors describe this plant as a large bush or shrub, 2—3 m. tall, with yellow flowers and orange fruit, growing in pastures, at 3—600 meters altitude, flowering in July, August, and December, and fruiting in November. Morton 4083 exhibits some leaves smooth and some hairy.

Additional citations: CUBA: Las Villas: R. A. Howard 5650 (W—1843985), 6629 (W—1959175); Morton 4083 (W—1783453). Oriente: Alain & López Figueiras 7173 (Bm); Ekman 1509 (W—2113455), 8019 (W—2113454); López Figueiras 1039 (W—2226623).

CITHAREXYLUM ULEI Moldenke

Additional bibliography: Moldenke, Phytologia 7: 66—68 (1959) and 13: 302. 1966.

Schlüter describes the fruit of this plant as soft red, and states that it is used as bait for fish. He found it growing at 85 meters altitude, fruiting in March. A specimen of Ule 5501, deposited in the Delessert Herbarium at the Conservatoire et Jardin Botaniques at Geneva, was photographed there by Macbride as his type photograph number 28399, but is not a type.

Additional citations: COLOMBIA: Putumayo: R. E. Schlüter 3381 (W—1952755). BRAZIL: Amazonas: Ule 5501 [Macbride photos 28399] (W—photo).

CITHAREXYLUM ULEI var. CALVESCENS Moldenke

Additional bibliography: Moldenke, Phytologia 7: 68. 1959.

Additional citations: BRAZIL: Maranhão: Fróes 1719 (Mi—isotype).

CITHAREXYLUM WEBERBAUERI Hayek

Additional bibliography: Moldenke, Phytologia 7: 71—73. 1959; Soukup, Biota 3: 30. 1960; Moldenke, Phytologia 13: 303. 1966.

Angulo says of this plant "son venenosas" and records the common name "tantal". He found it growing at 2645 meters altitude. The type specimen, Weberbauer 3731, deposited in the herbarium of the Botanisches Museum at Berlin, was photographed there by Macbride as his type photograph number 17603, but is now destroyed. The Ellenberg 1946, distributed as C. weberbaueri, is actually C. quercifolium Hayek.

Additional citations: PERU: Huánuco: Weberbauer 3731 [Macbride photos 17603; Herb. U. S. Nat. Arb. 197893] (W—photo of type). La Libertad: Angulo 1267 (Z).